

CLAIMS

1. A motion image coding apparatus which codes a motion image by executing motion compensation for frame data to be coded by referring to a plurality of frame data in the motion image, comprising:

detecting means for detecting a motion of an imaging device;

a plurality of storage means for storing said plurality of frame data;

selecting means for selecting, from said plurality of storage means, on the basis of motion information detected by said detecting means, storage means for storing reference frame data to be referred to when the frame data to be coded is coded;

estimating means for estimating a motion vector on the basis of the reference frame data stored in said storage means selected by said selecting means and the frame data to be coded;

coding means for coding the frame data to be coded by using the motion vector estimated by said estimating means; and

output means for outputting the coded data which is coded by said coding means.

2. The motion image coding apparatus according to claim 1, wherein said detecting means detects the motion of said imaging device on the basis of a motion image sensed by said imaging device.

3. The motion image coding apparatus according to claim 1, wherein said selecting means comprises control means for controlling write/read and power supply to said plurality of storage means on the basis
5 of the motion information detected by said detecting means.

4. The motion image coding apparatus according to claim 1, further comprising setting means for setting an image sensing mode of said imaging device,
10 wherein said selecting means comprises control means for controlling write/read and power supply to said plurality of storage means on the basis of the image sensing mode set by said setting means.

5. The motion image coding apparatus according to claim 3 or 4, wherein said control means stops power
15 supply to storage means not selected by said selecting means.

6. The motion image coding apparatus according to claim 1, further comprising search range control
20 means for controlling a motion vector search range of said estimating means on the basis of the motion image detected by said detecting means.

7. A motion image coding apparatus which codes a motion image by executing motion compensation for frame
25 data to be coded by referring to a plurality of frame data in the motion image, comprising:

setting means for setting an image sensing mode

of an imaging device;

a plurality of storage means for storing said plurality of frame data;

selecting means for selecting, from said
5 plurality of storage means, on the basis of the image sensing mode set by said setting means, storage means for storing reference frame data to be referred to when the frame data to be coded is coded;

estimating means for estimating a motion vector
10 on the basis of the reference frame data stored in said storage means selected by said selecting means and the frame data to be coded;

coding means for coding the frame data to be coded by using the motion vector estimated by said
15 estimating means; and

output means for outputting the coded data which is coded by said coding means.

8. The motion image coding apparatus according to claim 7, wherein said selecting means comprises
20 control means for controlling write/read and power supply to said plurality of storage means.

9. The motion image coding apparatus according to claim 8, wherein said control means stops power supply to storage means not selected by said selecting
25 means.

10. The motion image coding apparatus according to claim 7, wherein said detecting means detects a

motion of said imaging device on the basis of a motion image sensed by said imaging device.

11. A motion image coding apparatus which codes a motion image by executing motion compensation for
5 frame data to be coded by referring to a plurality of frame data in the motion image, comprising:

input means for inputting control information which controls an imaging device;

storage means for storing a motion image sensed
10 by said imaging device;

setting means for setting the number of reference frame data to be referred to when the frame data to be coded is coded, on the basis of motion information of said imaging device, which is acquired on the basis of
15 the control information input by said input means;

acquiring means for acquiring reference frame data corresponding to the number of reference frame data set by said setting means;

estimating means for estimating a motion vector
20 on the basis of the reference frame data acquired by said acquiring means and the frame data to be coded;

coding means for coding the frame data to be coded by using the motion vector estimated by said estimating means; and

25 output means for outputting the coded data which is coded by said coding means.

12. The motion image coding apparatus according

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to claim 11, further comprising search range control means for controlling a motion vector search range of said estimating means on the basis of the motion information.

5 13. A control method of a motion image coding apparatus which comprises a plurality of storage units for storing a plurality of frame data in a motion image, and codes the motion image by executing motion compensation for frame data to be coded by referring to
10 frame data stored in the plurality of storage units, comprising:

 a detection step of detecting a motion of an imaging device;

 a selection step of selecting, from the plurality
15 of storage units, on the basis of motion information detected in the detection step, a storage unit for storing reference frame data to be referred to when the frame data to be coded is coded;

 an estimation step of estimating a motion vector
20 on the basis of the reference frame data stored in the storage unit selected in the selection step and the frame data to be coded;

 a coding step of coding the frame data to be coded by using the motion vector estimated in the
25 estimation step; and

 an output step of outputting the coded data which is coded in the coding step.

14. A control method of a motion image coding apparatus which comprises a plurality of storage units for storing a plurality of frame data in a motion image, and codes a motion image by executing motion compensation for frame data to be coded by referring to frame data stored in the plurality of storage units, comprising:

a setting step of setting an image sensing mode of an imaging device;

10 a selection step of selecting, from the plurality of storage units, on the basis of the image sensing mode set in the setting step, a storage unit for storing reference frame data to be referred to when the frame data to be coded is coded;

15 an estimation step of estimating a motion vector on the basis of the reference frame data stored in the storage unit selected in the selection step and the frame data to be coded;

a coding step of coding the frame data to be coded by using the motion vector estimated in the estimation step; and

20 an output step of outputting the coded data which is coded in the coding step.

15. A control method of a motion image coding apparatus which comprises a storage unit for storing a motion image, and codes the motion image by executing motion compensation for frame data to be coded by

referring to frame data stored in the storage unit,
comprising:

an input step of inputting control information
which controls an imaging device;

5 a setting step of setting the number of reference
frame data to be referred to when the frame data to be
coded is coded, on the basis of motion information of
the imaging device, which is acquired on the basis of
the control information input in the input step;

10 an acquisition step of acquiring reference frame
data corresponding to the number of reference frame
data set in the setting step;

an estimation step of estimating a motion vector
on the basis of the reference frame data acquired in
15 the acquisition step and the frame data to be coded;

a coding step of coding the frame data to be
coded by using the motion vector estimated in the
estimation step; and

an output step of outputting the coded data which
20 is coded in the coding step.

16. A program for implementing control of a
motion image coding apparatus which comprises a
plurality of storage units for storing a plurality of
frame data in a motion image, and codes the motion
25 image by executing motion compensation for frame data
to be coded by referring to frame data stored in the
plurality of storage units, comprising program codes

of:

a detection step of detecting a motion of an imaging device;

5 a selection step of selecting, from the plurality of storage units, on the basis of motion information detected in the detection step, a storage unit for storing reference frame data to be referred to when the frame data to be coded is coded;

10 an estimation step of estimating a motion vector on the basis of the reference frame data stored in the storage unit selected in the selection step and the frame data to be coded;

a coding step of coding the frame data to be coded by using the motion vector estimated in the
15 estimation step; and

an output step of outputting the coded data which is coded in the coding step.

17. A program for implementing control of a motion image coding apparatus which comprises a
20 plurality of storage units for storing a plurality of frame data in a motion image, and codes a motion image by executing motion compensation for frame data to be coded by referring to frame data stored in the plurality of storage units, comprising program codes
25 of:

a program code of a setting step of setting an image sensing mode of an imaging device;

a program code of a selection step of selecting, from the plurality of storage units, on the basis of the image sensing mode set in the setting step, a storage unit for storing reference frame data to be referred to when the frame data to be coded is coded;

an estimation step of estimating a motion vector on the basis of the reference frame data stored in the storage unit selected in the selection step and the frame data to be coded;

a coding step of coding the frame data to be coded by using the motion vector estimated in the estimation step; and

an output step of outputting the coded data which is coded in the coding step.

18. A program for implementing control of a motion image coding apparatus which comprises a storage unit for storing a motion image, and codes the motion image by executing motion compensation for frame data to be coded by referring to frame data stored in the storage unit, comprising program codes of:

an input step of inputting control information which controls an imaging device;

a setting step of setting the number of reference frame data to be referred to when the frame data to be coded is coded, on the basis of motion information of the imaging device, which is acquired on the basis of the control information input in the input step;

an acquisition step of acquiring reference frame data corresponding to the number of reference frame data set in the setting step;

an estimation step of estimating a motion vector
5 on the basis of the reference frame data acquired in the acquisition step and the frame data to be coded;

a coding step of coding the frame data to be coded by using the motion vector estimated in the estimation step; and

10 an output step of outputting the coded data which is coded in the coding step.